



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
CHEMICAL SAFETY AND
POLLUTION PREVENTION

MEMORANDUM:

To: Maggie Rudick

Primary Reviewer: Jacquelyn Marchese, M.S.

Secondary Reviewer: Jennifer Urbanski, Ph.D.

Date: May 12, 2015

Subject: PRODUCT PERFORMANCE DATA EVALUATION RECORD

DP barcode: 426481

Decision no.: 496908

Submission no: 959904

Action code: R310

Product Name: Ortho Lawn Insect Control

EPA Reg. No or File Symbol: 239-ETEA

Formulation Type: Insecticide granules

Ingredients statement from the label with PC codes included: 0.115% bifenthrin (PC Code: 128825)

Application rate(s) of product and each active ingredient (lbs. or gallons/1000 square feet or per acre as appropriate; and g/m² or mg/cm² as appropriate):

- On lawns: 1-2 lbs of product uniformly spread over 1000 ft² = **0.05-0.1 lb a.i./acre**, 3 month control apply 4 lbs of product for every 1000 ft² = **0.2 lbs of a.i. per acre**
- Centipedes: 4 pounds of product over 1000 ft² = **0.2 lbs of a.i. per acre**
- Fire ant mounds: 1-3 tablespoons of product per mound
- On ornamentals and flowers: 0.5-1 lbs of product per 500 ft² = **0.05-0.1 lb a.i./acre**
- Vegetable gardens: 1 lb of product per 500 ft² = **0.1 lb a.i./acre**
- Home foundation/barrier treatment: 0.5-1 lb of product per 500 ft² = **0.05-0.1 lb a.i./acre**, 3 month control apply 2 lbs of product per 500 ft² = **0.2 lbs of a.i. per acre**

Use Patterns: apply to lawns, around ornamentals and flowers, in vegetable gardens, and for a home foundation/barrier treatment.

I. Action Requested: Review and report on the studies submitted to support public health label claims for this proposed product. Public health pests mentioned in the proposed label are fleas, ticks, and spiders.

II. Background: Scotts has submitted an application for a new bifenthrin product to control many invertebrate pests including fleas, ticks, and spiders.

III. MRID Summary:

44137401. Efficacy of Broadcast Applications of Bifenthrin Liquid and Granular Formulations for Deer Tick (*Ixodes* sp.) Control in Turfgrass.

Bermudagrass turf was placed tightly into 30 cm by 12.7 cm high tubs and then a granular bifenthrin product was introduced by a broadcast application to the turf at 0.2 lb a.i./acre using "shaker jars." Turf was then watered to

activate the product. Immediately after treatment, 10 laboratory reared deer ticks were introduced into the tubs. Alive and dead ticks were counted at 48 hours post-inoculation. Exposure to the granular bifenthrin product at a rate of 0.2 lb a.i./acre resulted in 100% control of deer ticks. This study demonstrated acceptable control of the deer tick at 0.2 lb a.i./acre. As the proposed label directs the user to apply the product at a rate of 0.1 lb a.i./acre, this study is **unacceptable** and does not support the proposed claims.

CLAIMS SUPPORTED FOR EPA FILE SYMBOL # 279-ETEA: None

44137402. Efficacy of Broadcast Applications of Bifenthrin Liquid and Granular Formulations for American Dog Tick (*Dermacentor variabilis*) Control in Turfgrass.

Tifway bermudagrass was placed in 30 cm diameter by 13 cm high plastic tubs and treated with a granular bifenthrin product at the rate of 0.2 lbs of a.i./acre. After application, granules were immediately irrigated with 0.6 cm of water. Following the irrigation of the test arenas, 20 laboratory reared American dog ticks were placed in each tub. Ticks were evaluated for percent mortality. This study tested bifenthrin at the rate of 0.2 lb per acre and found acceptable levels of American dog tick mortality at that rate. This study is **unacceptable** in supporting the proposed product, based on the current label rates.

CLAIMS SUPPORTED FOR EPA FILE SYMBOL # 279-ETEA: None.

44638801. Efficacy of Bifenthrin Liquid and Granular Mound Treatments for Imported Fire Ant Control.

This study determined bifenthrin granules demonstrate adequate control of fire ant mounds for up to 30 days post treatment. Fire ant mounds were treated at the rate of a half of a cup per mound with a granular 0.2% bifenthrin product. After application of the granular bifenthrin product, mounds were soaked with 1 to 2 gallons of water. As a result of the pesticide application, fire ant mounds were destroyed and after 30 days, no new mounds redeveloped. The proposed product is 0.115% bifenthrin and the proposed label directs the application to apply 1-3 tablespoons per mound. As the labeled rate is lower than the tested rate, this study is **unacceptable** in supporting any claims for the proposed product.

CLAIMS SUPPORTED FOR EPA FILE SYMBOL # 279-ETEA: None

44891902. Efficacy of Broadcast Applications of Bifenthrin Liquid and Granular Formulations to Turfgrass for Cat Flea Larval and Adult control.

This study tested bifenthrin at the rate of 0.2 lb per acre in turf. Turf was treated up to 30 days before fleas were exposed. Although acceptable levels of control against both cat flea adults and larvae were demonstrated in this study, the rate of bifenthrin that was tested does not match the labeled rate of the product. Further, the proposed controls claim on the label is for 3 months instead of 30 days. This study is **unacceptable** to support claims at the proposed labeled rate.

CLAIMS SUPPORTED FOR EPA FILE SYMBOL # 279-ETEA: None

45298601. Efficacy of Broadcast Applications of Bifenthrin Granular Formulations for Insect Control in Turfgrass.

A number of studies were submitted under this MRID evaluating various bifenthrin products against different public health pests. The submitted studies evaluated residual applications of bifenthrin granules at various rates using forced exposure of arthropods for 24 hours or more. Because forced exposure for such long periods of time are not typical of natural exposure scenarios, the data do not support any outdoor residual claims and this study is **unacceptable**.

CLAIMS SUPPORTED FOR EPA FILE SYMBOL # 279-ETEA: None

46566201. Evaluation of Efficacy of Lawn Insect Control Granules Against Multiple Insects/Arthropods.

Field and lab studies assessing residual control on grass and soil were presented in this MRID. A bifenthrin granular product was applied at 0.2 lbs ai/acre. The study tested the efficacy of the product at various ages by exposing arthropods at varying times post product application. Assessments were made after 24 hours or more of forced exposure. Adequate control was not observed until after 48 hours or more of continuous exposure. Test arthropods

were never removed to clean containers. As the application rate of the test product is above the labeled rate, the data do not support any claims and the study is **unacceptable**.

CLAIMS SUPPORTED FOR EPA FILE SYMBOL # 279-ETEA: None

47086001. Residual Control of Bifenthrin Granules. This outdoor study exposed fire ants to treated areas of a granular bifenthrin product. Control of foraging red imported fire ants outside, on soil, was demonstrated for up to 148 days after treatment, when applying granular bifenthrin at 0.2 lbs ai/acre. Insufficient detail was provided on the length of forced exposure of fire ants to the treated surfaces. Generally up to 4 hours of forced exposure is acceptable, after which, insects are removed to a clean container for evaluation of mortality. As it is unclear how long forced exposure occurred, this study is **unacceptable**.

CLAIMS SUPPORTED FOR EPA FILE SYMBOL # 279-ETEA: None

46911801. Discussion Document Supporting Label Claim EPA Reg No 279-3240.

There were no data submitted in this MRID. Rather, a discussion was submitted supporting the argument that the currently registered bifenthrin product “begins killing immediately”. As actual data were not submitted, this study is **supplementary** and does not support any claims on its own.

CLAIMS SUPPORTED FOR EPA FILE SYMBOL # 279-ETEA: None

IV. RECOMMENDATIONS:

As stated above, the proposed label has the following rates:

- On lawns: 1-2 lbs of product uniformly spread over 1000 ft² = **0.05-0.1 lb a.i./acre**, 3 month control apply 4 lbs of product for every 1000 ft² = **0.2 lbs of a.i. per acre**
- Centipedes: 4 pounds of product over 1000 ft² = **0.2 lbs of a.i. per acre**
- Fire ant mounds: 1-3 tablespoons of product per mound
- On ornamentals and flowers: 0.5-1 lbs of product per 500 ft² = **0.05-0.1 lb a.i./acre**
- Vegetable gardens: 1 lb of product per 500 ft² = **0.1 lb a.i./acre**
- Home foundation/barrier treatment: 0.5-1 lb of product per 500 ft² = **0.05-0.1 lb a.i./acre**, 3 month control

As the label stands now, no public health claims are supported. Label changes needed are described below.

Proposed Label: 3 month control table (*Note to reviewer: please see page 3 of label dated 03/31/2015*)

There is a table on the proposed label with claims that the product controls public health pests for 3 months. These claims are unacceptable. Therefore, the following public health pests are listed in this table and should be removed:

- Fire ants (foragers)
- Harvester ants
- Chiggers
- Scorpions
- Spiders (Sac, hobo, brown recluse, and black widows)

Proposed Label: kill table (*Note to reviewer: please see page 4 of label dated 03/31/2015*)

There is also a general kills table in the proposed label that lists public health pests that are not supported by the data reviewed. The following public health pests should be removed from the kills table:

- Centipedes

- Pharoah ants
- Carpenter ants
- Fleas

If acceptable from a human health and an environmental fate perspective, the registrant could raise the rate in vegetable gardens and in lawns to 0.2 lbs of a.i. per acre to get the following public health claims:

- Kills cat fleas
- Kills fleas that may transmit FAD, Flea-bite anemia, tapeworms, Haemobartonellosis, Mycoplasma.
- Controls fleas for up to 30 days¹
- Controls fire ant mounds for up to 30 days (at the use rate of 0.89 cups per mound, then irrigate with 1-2 gallons of water).^{1,2}

Kills claims would be acceptable in turf, ornamental plants, and vegetable gardens.

The home foundation/barrier treatment is not supported for public health pests.

Tick claims are not supported because the registrant only tested 2 species of ticks. In addition to the deer tick and the American dog tick, acceptable data must be submitted for the lone star tick to support any tick claims.

¹The registrant did not include fleas or fire ant mounds in the original 3 month control table. The control of these pests for 30 days is supported with a rate change as noted above.

²0.89 cups per pound is the calculated rate of the proposed 0.115% bifenthrin product. The cited study was deemed efficacious using ½ cup per mound using a 0.2% bifenthrin product. Fire ant mounds should be irrigated after granule application.